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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,527	09/26/2003	Osman Ahmed	2003P14889US	1203

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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER

JARRETT, RYAN A

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/672,527	Applicant(s) AHMED, OSMAN	
	Examiner Ryan A. Jarrett	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-12 and 21-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-12 and 21-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments, see pages 7-8, filed 11/3/05, with respect to the 35 U.S.C. 112, 1st paragraph, rejection of claims 27, 31, and 35 have been fully considered and are persuasive. The 35 U.S.C. 112, 1st paragraph, rejection of claims 27, 31, and 35 has been withdrawn.

2. Applicant's arguments, see pages 8-10, filed 11/3/05, with respect to claims 1-3, 5, 7, 11, and 12, have been fully considered but they are not persuasive. Examiner maintains the position that the processor 60 embedded in the sensor assembly 50 of Fig. 4 is operable to generate the control output signals, per claim 1. Graviton discloses that the actuator assembly can receive commands from the Internet, from an end user, a node, or **“another sensor assembly”** (pg. 6 lines 19-29). Since the prior art reference must be considered as a whole and in its totality, this constitutes a teaching that the processing circuit of the MEMS sensor device is operable to generate the control output signal, per claim 1.

Applicant further argues, with respect to claim 1, that Graviton does not teach that the control outputs are generated based on at least one set point and the process value obtained from the at least MEMS sensor device. In pg. 10 lines 21-28, Graviton discloses that indoor air quality can be monitored and controlled, with an actuator serving to control venting based on the monitoring.

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Thus, the actuator increases or decreases the venting if the air quality sensor value is not with a certain specification, or range, or set point. Therefore, the vent actuator control outputs are based on some sort of deviation from a "set point", i.e., on an undesirable indoor air quality. The claimed "process value" corresponds to the actual sensed indoor air quality of Graviton, and the claimed "set point" corresponds to the desired value of the sensed indoor air quality. When the actual indoor air quality deviates too far from the desired indoor air quality, or set point, the processor of Graviton causes the vent to be actuated. It is clear that a "set point" is inherently required here. This is the only way that the processor can know "how" or "when" to modify the indoor air condition by actuating the vent.

3. Applicant's arguments, see pages 11-13, filed 11/3/05, with respect to claims 6, 8-10, and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

4. Applicant's arguments, see pages 13-14, filed 11/3/05, with respect to claims 26, 28-30, and 32-36, have been fully considered but they are not persuasive. Regarding claim 26, Examiner maintains that the previously cited passages of Graviton (e.g., pg. 4 line 31 – pg. 5 line 2, pg. 15 line 31 – pg. 16 line 3) clearly teach "a programmable non-volatile memory operably coupled to the processing circuit and supported by the first substrate". Applicant is attempting to look at various passages of the Graviton reference in a vacuum,

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with no regard or consideration for the teachings contained in other parts of the reference. The prior art reference must be considered as a whole and in its totality. In pg. 16 lines 24-29, Graviton merely cites RAM, ROM, and mass storage as examples. Graviton had already disclosed previously in the reference (pg. 4 line 31 – pg. 5 line 2) that the memory could also be Flash memory, i.e., programmable non-volatile memory or EEPROM.

5. Applicant's arguments, see page 15, filed 11/3/05, with respect to claims 27, 31, and 35 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 5, 7, 11, 12, 26, 28-30, and 32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by WO 00/54237 to Graviton, Inc. ("Graviton"), supplied by the applicant. Graviton discloses:

1. An apparatus for use in a building automation system comprising: at least one microelectromechanical (MEMs) sensor device operable to generate a process value (e.g., pg. 4 lines 15-24, pg. 15 lines 14-16, pg. 17 lines 14-19); a processing circuit operable to convert the

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process value to an output digital signal configured to be communicated to another element of the building automation system (e.g., pg. 6 lines 19-29); and wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate (e.g., pg. 15 line 31 – pg. 16 line 3); and wherein the processing circuit is further operable to generate a first control output based on at least one set point and the process value obtained from the at least one MEMs sensor device (e.g., pg. 10 lines 21-28, *EN: Graviton discloses that indoor air quality can be monitored and controlled, with an actuator serving to control venting based on the monitoring. Thus, the actuator increases or decreases the venting if the air quality sensor value is not with a certain specification, or range, or set point. Therefore, the vent actuator control outputs are based on some sort of deviation from a “set point”, i.e., on an undesirable indoor air quality. The claimed “process value” corresponds to the actual sensed indoor air quality of Graviton, and the claimed “set point” corresponds to the desired value of the sensed indoor air quality. When the actual indoor air quality deviates too far from the desired indoor air quality, or set point, the processor of Graviton causes the vent to be actuated. It is clear that a “set point” is inherently required here. This is the only way that the processor can know “how” or “when” to modify the indoor air condition by actuating the vent.*), and wherein the output digital signal is representative of the first control output (e.g., pg. 6 lines 19-29).

2. The apparatus of claim 1 wherein the processing circuit includes a microelectronics A/D converter, the microelectronics A/D converter operable to receive the process value from the at least one MEMs sensor device and generate a digital sensor signal therefrom (e.g., pg. 4 lines 15-24, pg. 15 lines 21-30).

5. The apparatus of claim 1 wherein the at least one MEMs sensor device includes a plurality of MEMs sensor devices (e.g., pg. 15 lines 14-16).

7. The apparatus of claim 1 wherein the first substrate is a semiconductor substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

11. The apparatus of claim 1 further comprising an RF communication circuit operably coupled to the processing circuit (e.g., pg. 15 line 31 – pg. 16 line 3).

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12. The apparatus of claim 1 further comprising an EEPROM operably coupled to the processing circuit (e.g., pg. 4 line 31 – pg. 5 line 2).

26. An apparatus for use in a building automation system, the apparatus comprising: at least one microelectromechanical (MEMS) sensor device operable to generate a process value (e.g., pg. 4 lines 15-24, pg. 15 lines 14-16, pg. 17 lines 14-19); a processing circuit operably connected to the at least one MEMS sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal configured to be communicated to another element of the building automation system (e.g., pg. 6 lines 19-29); a programmable non-volatile memory operably coupled to the processing circuit and supported by the first substrate (e.g., pg. 4 line 31 – pg. 5 line 2, pg. 15 line 31 – pg. 16 line 3); and wherein the at least one MEMS sensor device and the processing circuit are integrated onto a first substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

28. The apparatus of claim 26, wherein the programmable non-volatile memory is further operable to store configuration information relating to the apparatus (e.g., pg. 16 lines 24-29).

29. The apparatus of claim 28, wherein the configuration information includes identification information for the apparatus (e.g., pg. 24 lines 9-13).

30. The apparatus of claim 29, wherein the configuration information includes a network address corresponding to the apparatus (e.g., pg. 24 lines 9-13).

32. The apparatus of claim 28, wherein the configuration information includes system RF communication parameters (e.g., pg. 13 line 24 – pg. 14 line 4, pg. 16 lines 24-29).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6, 8-10 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graviton as applied to claim 1 above, and further in view of Yamazaki et al. US 2001/0033963. Per claims 21 and 22, Graviton discloses:

21. An apparatus for use in a building automation system, the apparatus comprising: at least one microelectromechanical (MEMs) sensor device operable to generate a process value (e.g., pg. 4 lines 15-24, pg. 15 lines 14-16, pg. 17 lines 14-19); a processing circuit operably connected to the at least one MEMs sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal configured to be communicated to another element of the building automation system (e.g., pg. 6 lines 19-29); a battery operably connected to provide power to at least the processing circuit (e.g., pg. 15 lines 14-21); and wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

22. The apparatus of claim 21 wherein the first substrate is a semiconductor substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

Graviton does not explicitly disclose that the battery is a lithium ion battery coupled to a power management circuit, and secured to the first substrate, or disposed between a first and second substrate. However, Yamazaki et al. discloses a layered substrate with a lithium ion battery secured and disposed between a first and second substrate (e.g., [0060]), and coupled to a power management circuit (e.g., [0034]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Graviton with Yamazaki et al. since Yamazaki et al. teaches that sheet batteries can be used to

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reduce the size and thickness of a compact electronic device (e.g., [0007]).

Additionally, wiring can be simplified with sheet batteries (e.g., [0009]).

10. Claims 27, 31, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graviton as applied to claims 26 and 28 above, and further in view of Moorehead et al. US 6,035,240.

Graviton discloses that the sensor memory may be utilized to store program information that achieves the various sensor functionality (pg. 16 lines 24-29). Graviton discloses that the physical parameters sensed by the sensor may be pressure, flow, temperature, turbidity, viscosity, voltage, power, current, etc. Graviton also discloses that various sensors may sense multiple different parameters or conditions, such as temperature and gas, or aromatics and temperature (pg. 18 lines 1-15).

Regarding claims 27, 31, and 35, Graviton does not appear to explicitly disclose that the programmable non-volatile flash memory comprises an EEPROM configured to store information generated by an external device selecting less than all of the available functions of the apparatus to be enabled; or that the configuration information stored in the programmable non-volatile memory includes function enabling information identifying as enabled less than all of the possible sensing functions available to be enabled on the sensor.

Moorehead discloses a flexible distributed processing system for sensor data acquisition and control comprising a sensor EEPROM configured to store information generated by an external device selecting less than all of the

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available sensing function to be enabled on the sensor (e.g., col. 5 lines 3-5, col. 5 line 61 – col. 6 line 9, col. 6 lines 54-57, col. 7 lines 35-38).

It would have obvious to one having ordinary skill in the art at the time the invention was made to modify Graviton with Moorehead et al. since Moorehead et al. teaches that storing such configuration information on a sensor EEPROM allows the sensor microprocessor to “know” what type of sensor is in use so that the sensor data can be processed accordingly. The sensor of Moorehead et al. is adaptable to measuring a wide variety of parameters with different sensor elements. So it is necessary to store the sensor type among other things in the sensor EEPROM.

Graviton as modified by Moorehead et al. additionally disclose:

33. The apparatus of claim 27, wherein the EEPROM is further operable to store configuration information relating to the apparatus (e.g., pg. 16 lines 24-29 of Graviton).

34. The apparatus of claim 33, wherein the configuration information includes identification information for the apparatus (e.g., pg. 24 lines 9-13 of Graviton).

36. The apparatus of claim 27, wherein the EEPROM is integrated on to the first substrate (e.g., pg. 4 line 31 – pg. 5 line 2, pg. 15 line 31 – pg. 5 line 2 of Graviton).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (571) 272-3742. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12. In view of the appeal brief filed on 11/3/05, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

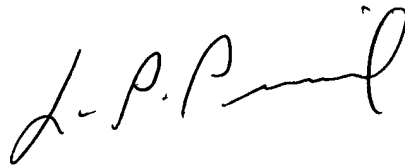
(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

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A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Ryan A. Jarrett
Examiner
Art Unit 2125

12/3/05
RAJ

A handwritten signature in black ink, appearing to read "L. Picard", with a stylized flourish at the end.

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100